

Are Flash droughts the new normal?

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Flash droughts have become more frequent, more severe, and flashier across Germany. Their effects also last longer

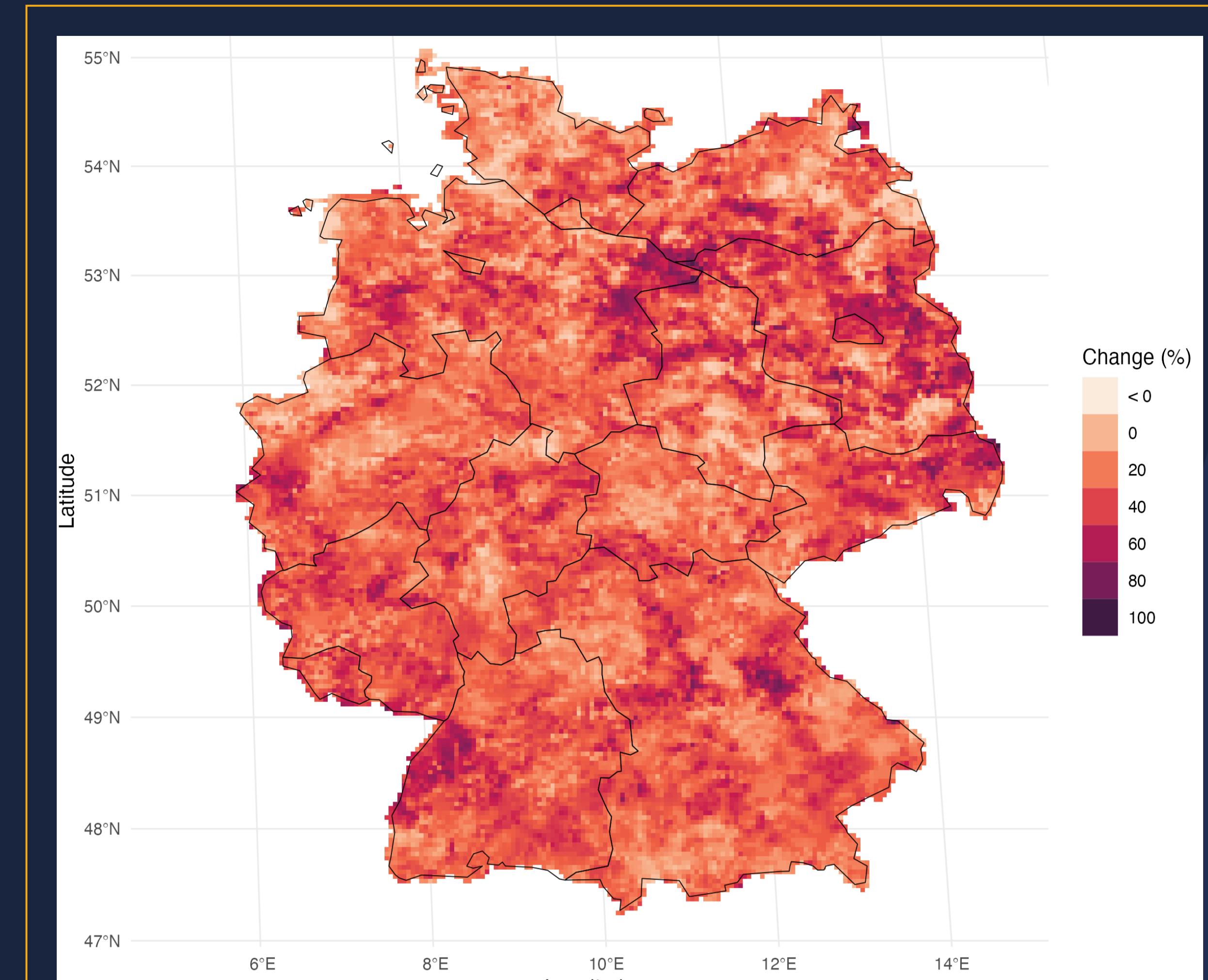
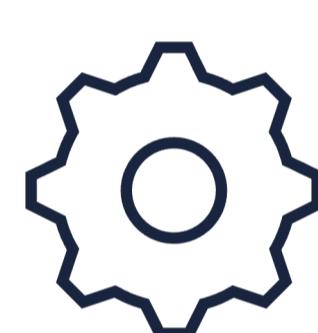


Fig 1. Change in occurrence of FD in the 1980's and 2020's



1. Introduction

- Flash droughts are characterized by a rapid depletion of soil moisture, from normal to very dry conditions
- Flash droughts are a seasonal phenomenon that leads to impacts on agriculture, water resources, ecosystems, etc.



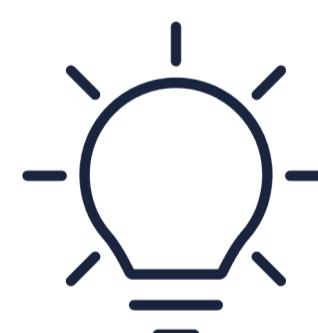
2. Methods

- We use **soil moisture** estimates (UFZ¹) to assess occurrence of flash droughts²
- We use crop models (WOFOST³) to assess the **impacts** of flash droughts⁴



3. Results

- Flash droughts are usual phenomena in Germany, observed since before the 1980's
- There is, however, an intense increased in occurrence, persistence, and intensity of FD, particularly in the 2000's
- There is a direct relation in the duration and intensity of FD and crop losses
- Furthermore, despite not known by the general public, FD impacts are present in the drought impact perception dataset for Germany⁵



4. Future research

- Develop **meaningful definitions** for flash drought that are informed by **land use, local practices and users perceptions** on drought impacts.

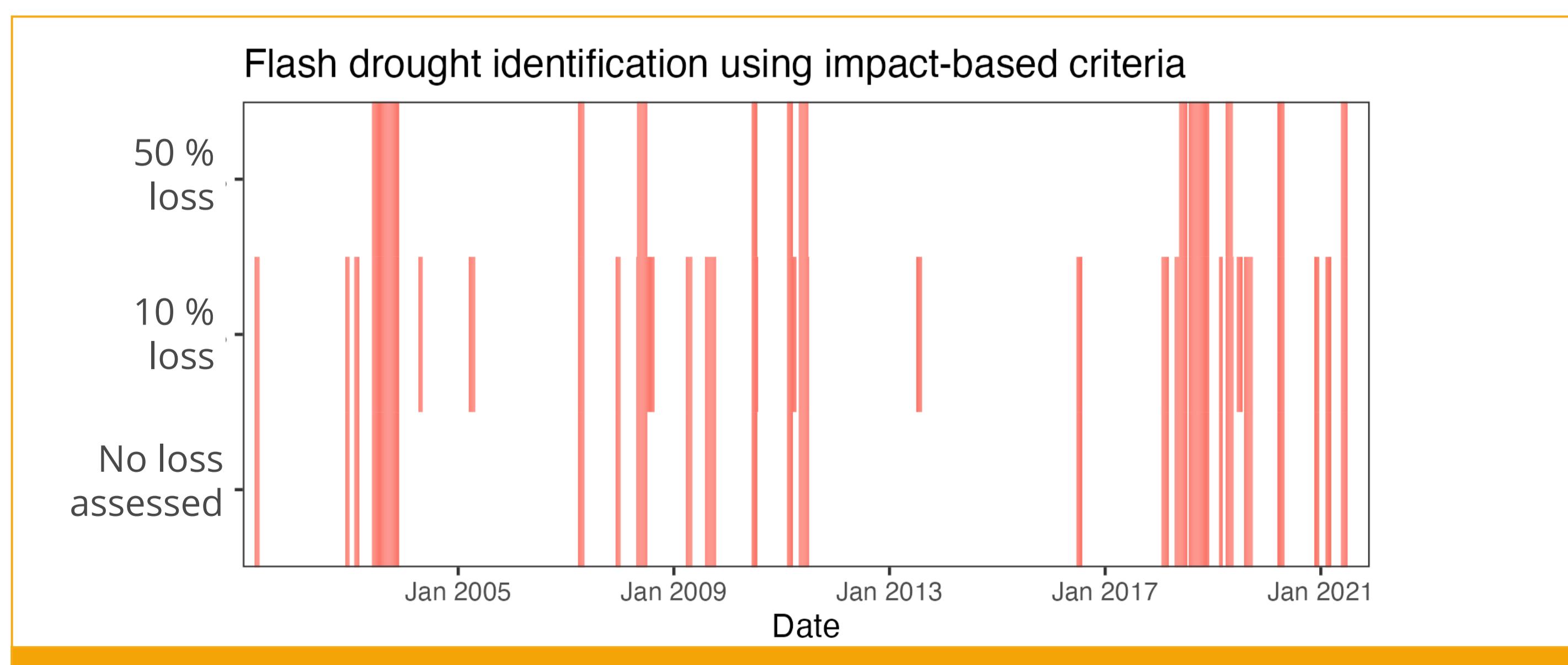


Figure 3. Delay between FD onset and impact perception

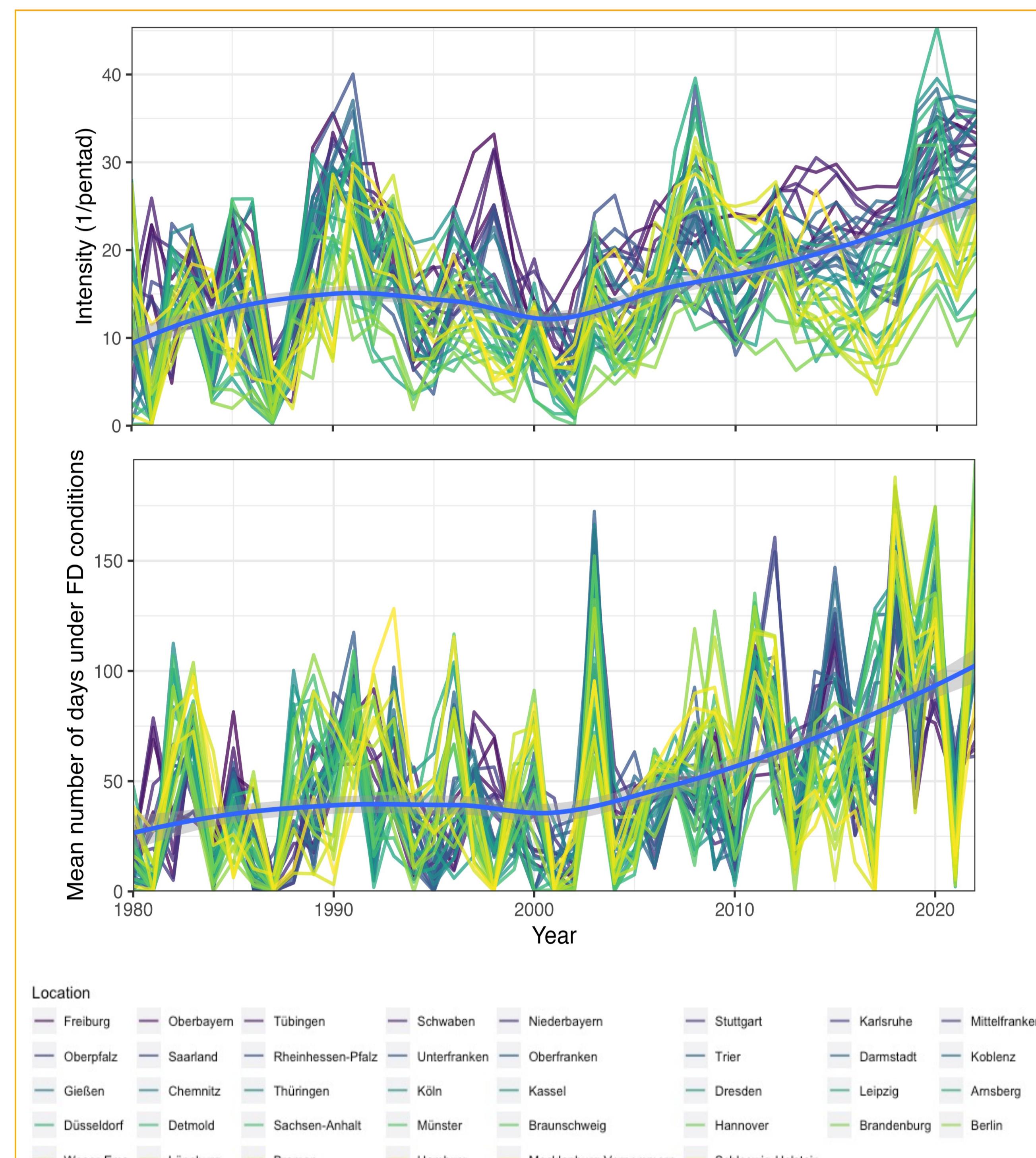


Figure 2. (a) Trends in FD intensity and (b) trends in FD persistence. Values aggregated at NUTS-2 level

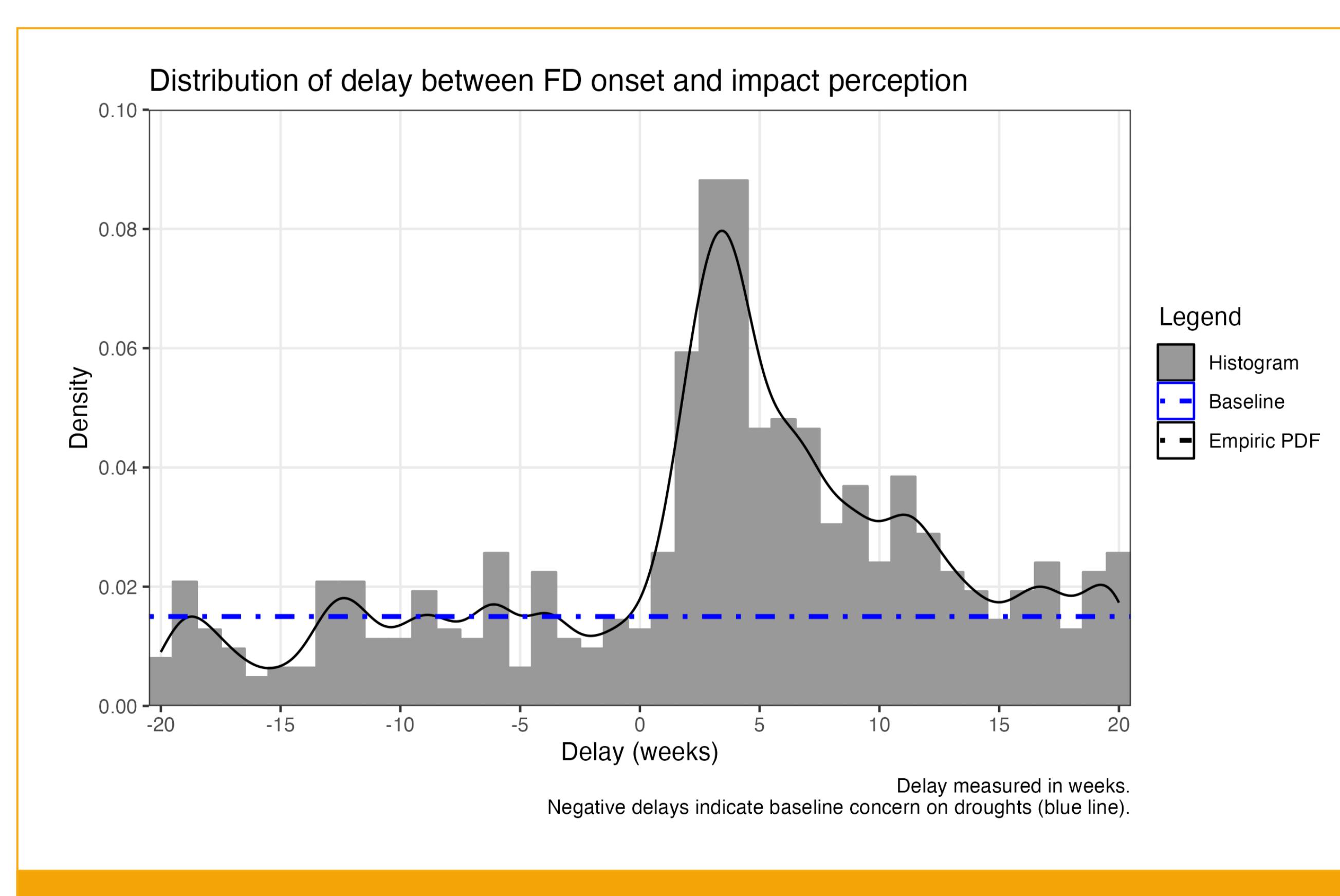


Figure 3. Delay between FD onset and impact perception

References

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